

INTAKE MANIFOLD WITH EGR/AIR MIXING

Abstract of the Disclosure

An intake manifold mixes and supplies air and exhaust recirculation gas (EGR) to an internal combustion engine. The manifold is a casting and includes an air intake port, an intake chamber receiving intake air from the intake port, an outlet plenum communicated with the engine, an EGR inlet port, and first and second EGR valve chambers. A first EGR passage communicates the EGR inlet port with the first EGR valve chamber. A second EGR passage communicates the EGR inlet port with the second EGR valve chamber. A central EGR outlet passage communicates an end of each EGR valve chamber with a central portion of the plenum. First and second EGR outlet chambers receive EGR from the first and second valve chambers, and have outlet ports which communicate with first and second ends of the plenum. A wall separates the intake chamber from the central EGR outlet passage chamber and from one of the EGR inlet passages. The wall creating turbulence as the EGR from the central EGR outlet passage mixes with intake air from the intake chamber.